

**Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Previously presented) An implant composition for stimulating bone growth, comprising:

- (a) a first calcium sulfate compound,
  - (b) polymer containing particles comprising a second calcium sulfate compound, and at least one resorbable polymer, and
  - (c) a setting agent for setting said calcium sulfate compound and said polymer containing particles into a heterogeneous solid composition,
- wherein upon setting, said calcium sulfate compound forms a matrix and said polymer containing particles are settled within said matrix.

2. (Original) The implant composition of Claim 1, wherein a rate of resorption of said implant composition in a recipient site is in a range from about four weeks to about twenty eight weeks.

3. (Original) The implant composition of Claim 1, wherein said matrix and said polymer containing particles resorb at different rates in a recipient site, and resorption of said polymer containing particles being slower.

4. (Previously presented) The implant composition of Claim 1, wherein said first calcium sulfate compound is calcium sulfate hemihydrate.

5. (Original) The implant composition of Claim 1, wherein said setting

agent is selected from the group consisting of water, an alkaline metal salt solution, and a potassium salt solution.

6. (Canceled)

7. (Previously presented) The implant composition of Claim 1, wherein size of said polymer containing particles is more than 20  $\mu\text{m}$  in diameter.

8. (Previously presented) The implant composition of Claim 1, wherein said second calcium sulfate compound in said polymer containing particles is selected from the group consisting of calcium sulfate dihydrate, calcium sulfate hemihydrate, and mixture thereof.

9. (Previously presented) The implant composition of Claim 1, wherein said resorbable polymer is mixed with said calcium sulfate compound of said particles.

10. (Previously presented) The implant composition of Claim 1, wherein said calcium sulfate compound of said particles is coated with a resorbable polymer coating.

11. (Original) The implant composition of Claim 10, wherein thickness of said resorbable polymer coating is from about 2  $\mu\text{m}$  to about 50  $\mu\text{m}$ .

12. (Previously presented) The implant composition of Claim 1, wherein said resorbable polymer is aliphatic polyesters of alpha-hydroxy acid derivatives.

13. (Original) The implant composition of Claim 12, wherein said resorbable polymer is selected from the group consisting of polyactides, polyglycolides, polydioxanone, and poly  $\epsilon$ -caprolactone.

14. (Previously presented) The implant composition of Claim 12, wherein said resorbable polymer is polyactides.

15. (Currently amended) The implant composition of Claim 1, wherein said resorbable polymer is ~~an amino acid derived polymer selected from the group consisting of poly(desaminotyrosyl-tyrosine ethyl ester carbonates) and their derivatives~~ a poly(desaminotyrosyl-tyrosine ethyl ester carbonate).

16. (Previously presented) The implant composition of Claim 1, wherein said resorbable polymer is selected from the group consisting of hydrophobic polymers, carnuba waxes, water soluble polymers, polyvinyl alcohols, and therapeutic polymers containing salicylates.

17. (Previously presented) The implant composition of Claim 1, wherein the amount of said resorbable polymer in said polymer containing particle is in a range from about 0.1% to about 50% (w/w).

18. (Previously presented) A kit of implant materials for bone augmentation and bone defect reparation comprising:

- (a) dry powder of a first calcium sulfate compound, and
- (b) polymer containing particles comprising a second calcium sulfate compound, and at least one resorbable polymer.

19. (Previously presented) The kit of implant materials of Claim 18, wherein said first calcium sulfate compound is calcium sulfate hemihydrate.

20. (Canceled)

21. (Previously presented) The kit of implant materials of Claim 18, wherein

size of said polymer containing particles is more than 20  $\mu\text{m}$  in diameter.

22. (Previously presented) The kit of implant materials of Claim 18, wherein said second calcium sulfate compound in said polymer containing particles is selected from the group consisting of calcium sulfate dihydrate, calcium sulfate hemihydrate, and mixture thereof.

23. (Previously presented) The kit of implant materials of Claim 18, wherein said resorbable polymer is mixed with said calcium sulfate compound of said particles.

24. (Previously presented) The kit of implant materials of Claim 18, wherein said calcium sulfate compound of said particles is coated with a resorbable polymer coating.

25. (Original) The kit of implant materials of Claim 24, wherein thickness of said resorbable polymer coating is from about 2  $\mu\text{m}$  to about 50  $\mu\text{m}$ .

26. (Previously presented) The kit of implant materials of Claim 18, wherein said resorbable polymer is aliphatic polyesters of alpha-hydroxy acid derivatives.

27. (Original) The kit of implant materials of Claim 26, wherein said resorbable polymer is selected from the group consisting of polyactides, polyglycolides, polydioxanone, and poly  $\epsilon$ -caprolactone.

28. (Original) The kit of implant materials of Claim 26, wherein said resorbable polymer is polyactides.

29. (Currently amended) The kit of implant materials of Claim 18, wherein said resorbable polymer is ~~an amino acid derived polymer selected from the group~~

~~consisting of poly(desaminotyrosyl-tyrosine ethyl ester carbonates) and their derivatives a poly(desaminotyrosyl-tyrosine ethyl ester carbonate).~~

30. (Previously presented) The kit of implant materials of Claim 18, wherein said resorbable polymer is selected from the group consisting of hydrophobic polymers, carnuba waxes, water soluble polymers, polyvinyl alcohols, and therapeutic polymers containing salicylates.

31. (Previously presented) The kit of implant materials of Claim 18, wherein the amount of said resorbable polymer in said polymer containing particle is in a range from about 0.1% to about 30% (w/w).

32. (Previously presented) The kit of implant materials of Claim 18, wherein said kit comprises two different polymer containing particles that resorb at different rates in a recipient site.

33. (Original) The kit of implant materials of Claim 18 further comprising a setting agent, packed in a container.

34. (Original) The kit of implant materials of Claim 33, wherein said setting agent is selected from the group consisting of water, an alkaline metal salt solution, and a potassium salt solution.

35. (Original) The kit of implant materials of Claim 18 further comprising instructions on how to use the kit.

36. (Previously presented) A method for bone augmentation and bone defect reparation comprising the steps of:

(a) mixing a calcium sulfate compound and resorbable polymer coated particles with a setting agent into a mixture,

- (b) applying said mixture, and
- (c) setting said mixture into a heterogeneous solid composition, wherein upon setting, said calcium sulfate compound forms a matrix and said resorbable polymer coated particles settled within said matrix;  
wherein said heterogeneous solid composition resorbs at a controlled rate in a recipient site for stimulating bone growth.

37. (Original) The method of Claim 36, wherein applying said mixture is filling a recipient site with said mixture.

38. (Original) The method of Claim 36, wherein applying said mixture is coating said mixture on a surface of a surgical implant prior to introducing said surgical implant into said recipient site.

39. (Original) The method of Claim 36, wherein said setting agent controls a speed of setting said mixture into a heterogeneous solid composition.

40. (Original) The method of Claim 39, wherein said setting agent is selected from the group consisting of water, an alkaline metal salt solution, and a potassium salt solution.

41. (Previously presented) The method of Claim 36, wherein said resorbable polymer coated particles resorbable polymer coated particles that resorb at different rates in a recipient site.

42. (Previously presented) An implant composition for stimulating bone growth, comprising:

- (a) a calcium sulfate compound,
- (b) resorbable polymer coated particles, and
- (c) a setting agent for setting said calcium sulfate compound and said

resorbable polymer coated particles into a heterogeneous solid composition,  
wherein upon setting, said calcium sulfate compound forms a matrix and  
said resorbable polymer coated particles are settled within said matrix.

43. (Previously presented) The implant composition of Claim 42, wherein  
said matrix and said resorbable polymer coated particles resorb at different rates  
in a recipient site, and resorption of said resorbable polymer coated particles  
being slower.

44. (Previously presented) The implant composition of Claim 43, wherein a  
rate of resorption of said implant composition in a recipient site is in a range from  
about four weeks to about twenty eight weeks.

45. (Previously presented) The implant composition of Claim 43, wherein  
said calcium sulfate compound is calcium sulfate hemihydrate.

46. (Previously presented) The implant composition of Claim 43, wherein  
said setting agent is selected from the group consisting of water, an alkaline metal  
salt solution, and a potassium salt solution.

47. (Previously presented) The implant composition of Claim 43, wherein  
said resorbable polymer coated particles comprise:

- (a) a calcium sulfate compound, and
- (b) a polymer coating with at least one resorbable polymer.

48. (Previously presented) The implant composition of Claim 47, wherein  
size of said resorbable polymer coated particles is more than 20  $\mu\text{m}$  in diameter.

49. (Previously presented) The implant composition of Claim 47, wherein  
said calcium sulfate compound in said resorbable polymer coated particles is

selected from the group consisting of calcium sulfate dihydrate, calcium sulfate hemihydrate, and mixture thereof.

50. (Previously presented) The implant composition of Claim 49, wherein thickness of said polymer coating is from about 2  $\mu\text{m}$  to about 50  $\mu\text{m}$ .

51. (Previously presented) The implant composition of Claim 50, wherein said resorbable polymer is aliphatic polyesters of alpha-hydroxy acid derivatives.

52. (Previously presented) The implant composition of Claim 51, wherein said resorbable polymer is selected from the group consisting of polyactides, polyglycolides, polydioxanone, and poly  $\epsilon$ -caprolactone.

53. (Previously presented) The implant composition of Claim 51, wherein said resorbable polymer is polyactides.

54. (Currently amended) The implant composition of Claim 50, wherein said resorbable polymer is ~~an amino acid derived polymer selected from the group consisting of poly(desaminotyrosyl-tyrosine ethyl ester carbonates) and their derivatives~~ a poly(desaminotyrosyl-tyrosine ethyl ester carbonate).

55. (Previously presented) The implant composition of Claim 50, wherein said resorbable polymer is selected from the group consisting of hydrophobic polymers, caruba waxes, water soluble polymers, polyvinyl alcohols, and therapeutic polymers containing salicylates.

56. (Previously presented) The implant composition of Claim 50, wherein the amount of said resorbable polymer in said resorbable polymer coated particles is in a range from about 0.1% to about 50% (w/w).



57. (Previously presented) A kit of implant materials for bone augmentation and bone defect reparation comprising:

- (a) dry powder of a calcium sulfate compound, and
- (b) resorbable polymer coated particles.

58. (Previously presented) The kit of implant materials of Claim 57, wherein said calcium sulfate compound is calcium sulfate hemihydrate.

59. (Previously presented) The kit of implant materials of Claim 57, wherein said resorbable polymer coated particles comprise:

- (a) a calcium sulfate compound, and
- (b) a polymer coating with at least one resorbable polymer.

60. (Previously presented) The kit of implant materials of Claim 59, wherein size of said resorbable polymer coated particles is more than 20  $\mu\text{m}$  in diameter.

61. (Previously presented) The kit of implant materials of Claim 59, wherein said calcium sulfate compound in said resorbable polymer coated particles is selected from the group consisting of calcium sulfate dihydrate, calcium sulfate hemihydrate, and mixture thereof.

62. (Previously presented) The kit of implant materials of Claim 61, wherein thickness of said polymer coating is from about 2  $\mu\text{m}$  to about 50  $\mu\text{m}$ .

63. (Previously presented) The kit of implant materials of Claim 62, wherein said resorbable polymer is aliphatic polyesters of alpha-hydroxy acid derivatives.

64. (Previously presented) The kit of implant materials of Claim 63, wherein said resorbable polymer is one selected from the group consisting of polyactides, polyglycolides, polydioxanone, and poly  $\epsilon$ -caprolactone.

65. (Previously presented) The kit of implant materials of Claim 63, wherein said resorbable polymer is polyactides.

66. (Currently amended) The kit of implant materials of Claim 62, wherein said resorbable polymer is ~~an amino acid derived polymer selected from the group consisting of poly(desaminotyrosyl tyrosine ethyl ester carbonates) and their derivatives~~ a poly(desaminotyrosyl-tyrosine ethyl ester carbonate).

67. (Previously presented) The kit of implant materials of Claim 62, wherein said resorbable polymer is selected from the group consisting of hydrophobic polymers, carnuba waxes, water soluble polymers, polyvinyl alcohols, and therapeutic polymers containing salicylates.

68. (Previously presented) The kit of implant materials of Claim 62, wherein the amount of said resorbable polymer in said resorbable polymer coated particles is in a range from about 0.1% to about 30% (w/w).

69. (Previously presented) The kit of implant materials of Claim 59, wherein said kit comprises two different resorbable polymer coated particles that resorb at different rates in a recipient site.

70. (Previously presented) The kit of implant materials of Claim 59 further comprising a setting agent, packed in a container.

71. (Previously presented) The kit of implant materials of Claim 70, wherein said setting agent is selected from the group consisting of water, an alkaline metal salt solution, and a potassium salt solution.